

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
R. Bharat Rao et al.	)	
Serial No. 10/727,197	)	Examiner Vanel Frenel
Filing Date: December 3, 2003	)	Group Art Unit No. 3626
For: Systems and Methods for	)	Docket No.: 2002P19745US02
Automated Extraction And	)	
Processing of Billing Information in	)	
Patient Records	)	

### REPLY BRIEF

Mail Stop: Appeal Brief – Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

By the filing of this Reply Brief in accordance with 37 CFR § 41.41, Appellants respectfully request reconsideration of the above-identified patent application by the Board of Patent Appeals and Interferences.

#### **Satisfaction of 37 CFR §41.41(a)**

This reply brief does not include any new or non-admitted amendment, affidavit or other evidence.

The Examiner did not provide any new grounds for rejection.

#### **Reply Argument**

The previous headers from Applicant's Appeal Brief are provided below for ease of reference. The Examiner's argument label and page number from the Examiner's Answer are provided in parentheses.

1. Argument with Respect to Ground of Rejection No. 1

(a) *Rejection of Independent Claims 1, 25 and 39*

(Response to Argument (ii), page 25 of Examiner's Answer)

The Examiner notes Fig. 8 of Evans as showing the unstructured data sources including free text based documents. However, Fig. 8 of Evans shows an example viewer window (col. 4, lines 1-3). The viewer window does not show the format of the information source. To generate such a window, a structured data source is likely to better populate the displayed information. Evans shows gathering this data into a known structure, so the data displayed in the view is likely from this structured data source.

No unordinary meaning is ascribed to "unstructured data." Unstructured data is a known database term of art. Given a broadest reasonable interpretation, unstructured data does not include structured data. Evans may gather free text or images (see Fig. 8), but merely provides links to such data. For analysis with a computer by simple searching, Evans creates a file in a structured format (col. 12, lines 45-58).

PR Newswire, page 3, paragraph 1 is quoted to show analyzing with a computer information from an unstructured data source. The quote shows recommendation of billing codes and does not concern unstructured data. A structured database may be used to derive a HCFA compliant billing code (e.g., enter "X" in the diagnosis section of the chart or table, then a bill for X is generated). This paragraph, like the others, does not show extraction of billing information as a function of analysis of unstructured data.

*PR Newswire* provides a structured format by guiding the physician through a sequence of choices and codes with a preinstalled template for a given diagnosis (page 2, paragraph 5). Billing codes are based on these results. Rather than analyze unstructured data, *PR Newswire* shows creating the data in a computer guided method. There is no analysis of unstructured data.

*Evans, Harvin/Virginia et al.* and *PR Newswire* teach gathering data. Any analysis with a computer is not an analysis of unstructured data.

(Response to Arguments (iii) and (vi), pages 26 and 27 of Examiner's Answer)

Applicant noted that *PR Newswire* failed to disclose analyzing unstructured data. The Examiner quotes the *PR Newswire* article at paragraph 12 (page 2) for this limitation. Security of personal information (e.g., HIPPA) does not show analysis of unstructured data. Multi-layer encryption and security control for privacy do not show analysis of unstructured data. File back-up in a same site as credit information does not show analysis of unstructured data. Storage with multiple redundancies does not show analysis of unstructured data. The combination of these teachings in this paragraph does not show analysis of unstructured data.

Security, multi-layer encryption, file back-up, and multiple redundancies do not disclose analysis with a computer of patient information. Performing programmed security actions does not provide for analysis of unstructured data.

The examiner alleges that the *PR Newswire* teaches use of unstructured data. However, it is exactly the opposite. *PR Newswire* teaches use of **structured** data. Specifically, in paragraph 5, *PR Newswire* teaches the choosing of "preinstalled Common Disease Templates", and in the previous sentence, guides the physician through specific choices and ICD-9 codes. These templates imply a structured form to the data being entered, which is what enables their knowledge base, and allows them to query their knowledge base. *PR Newswire* does not teach entering data outside these templates. The fundamental reason is that outside these structured templates, the have no method to access the knowledge base.

(Response to Argument (v), page 27 of Examiner's Answer)

The Examiner alleges an Applicant admission that "medical diagnosis" is "equivalent" to a domain specific condition. Regardless of the accuracy of this allegation, *PR Newswire* (referred to here as iMedica by the Examiner) does not provide for using domain knowledge to extract information from unstructured patient records. The quote from *PR Newswire* provides for documentation of the patient encounter by providing an intuitive sequence of medical choices and diagnoses codes when the physician has arrived at a diagnosis. Based on the allegation above, a template provides a sequence of choices once the user has arrived at a domain specific

condition. A template is provided for common diseases or domain specific conditions. The template guides the user through charting for common domains. However, the user makes choices, such as inputting a diagnosis. The template for that diagnosis provides a list of symptoms common for the diagnosis. There is no analysis of unstructured data with a computer. There is no use of domain knowledge to extract information from unstructured sources.

*(b) Rejection of Claims 5 and 42*

(Response to Arguments (iv) and (vii), pages 26-27 and 28 of Examiner's Answer)

For argument (iv), the Examiner cites to the Evans disclosure of data tables having ICD 9 diagnosis codes and CPT procedure codes to show that all the codes supported by the patient information are extracted. Having codes for diagnoses and procedures does not indicate extraction of all billing codes supported by the patient information. For example, a doctor may diagnose X, but the patient information may also indicate diagnosis for Y as well. If the table does not include an entry for Y (e.g., assumes one final diagnosis), then the codes for Y will not be provided. A table of codes may be incomplete, or the entry triggering selection of a code from the table may be incomplete. Evans just discloses a table, not any effort at complete analysis. There is no disclosure that all the codes supported by the patient information are extracted.

For argument (vii), the Examiner notes iMedica (page 3, paragraphs 1-2). This is assumed to be the *PR Newswire* reference. Recommending billing codes for accurate billing does not provide for extraction of all codes supported.

*(c) Rejection of Claims 6 and 7*

(Response to Argument (viii), page 28 of Examiner's Answer)

The Examiner cites to page 4, paragraph 3 of *Harvin/Virginia et al* to show institution-specific domain knowledge. This paragraph notes full integration to form an electronic medical record. The medical records can simplify patient visits by providing customized lists of common complaints linked with relevant diagnosis. While customization is mentioned generally, no specifics are provided. The customization is

of a list of common complaints, not domain knowledge used for analyzing information in a medical record. *Harvin/Virginia et al.* do not teach or suggest “institution-specific domain knowledge” as required by dependent claims 6 and 7.

*(e) Rejection of Claims 10, 11, 24, 28 and 29*

(Response to Argument (ix), page 28 of Examiner’s Answer)

The Examiner alleges that *PR Newswire*, page 2, paragraph 10-page 3, paragraph 4 shows an explanation with a pointer to information supporting the extracted billing information. The cited portion teaches some general information. Real time charting is available by Internet (page 2, paragraphs 10 and 11), but in a secure manner to protect privacy (page 2, paragraph 12). Recommended billing codes based on the charting assists users (page 3, paragraphs 1 and 2), and the charting software is available at a monthly fee (page 3, paragraphs 3 and 4). An audit trail of supporting coding documentation is noted at page 3, paragraph 2. However, there is not disclosure what the audit trail provides or is. The audit trail is not disclosed as being a pointer. The audit trail is not disclosed as including an explanation. *PR Newswire* does not teach or suggest an explanation with a pointer to information supporting the extracted billing information.

*(h) Rejection of Claims 21, 22, 23 and 37*

(Response to Argument (x), page 28 of Examiner’s Answer)

The Examiner alleges that *Harvin/Virginia et al.* (page 1, paragraph 7-page 2, paragraph 3) show automatically determining an expected amount of reimbursement. The cited portion teaches some general information. New financial strategies are provided for managed care (page 1, paragraphs 7 and 8). Reimbursement is noted as difficult due to errors (page 1, paragraph 9). Technology and other concerns make it difficult to provide quality care, increase revenue, reduce cost, and minimize risk (page 1, paragraph 10-page 2, paragraph 1). A model is used in Florida where each facility has unique requirements with a need to talk between facilities (page 2, paragraphs 2 and 3). Reimbursement being difficult in light of care models is not automatically determining an expected amount of reimbursement.

*(j) Rejection of Claims 44, 47 and 50*

(Response to Argument (xi), pages 28-29 of Examiner's Answer)

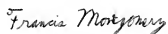
The Examiner relies on *Harvin/Virginia et al.* (page 4, paragraph 3) to show inferring without reference to diagnosis codes. This paragraph notes linking complaints to diagnoses, linking clinical and billing information, and providing access to codes notes among other items. There is no disclosure of inferring. There is no disclosure of inferring without reference to diagnosis codes.

**Conclusion**

The Examiner does not provide further argument. One further argument is noted (argument (xii), page 23 of the Examiner's answer), but no further comments are provided (see pages 28-29). Other arguments in the Applicant's Appeal Brief are not further addressed by the Examiner.

In conclusion, Appellants respectfully submit that the rejection raised by the Examiner has been overcome for at least the reasons set forth above. Accordingly, reversal of all grounds of rejection is respectfully requested.

Respectfully submitted,



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